
From: Leinenbach, Peter
To: Rylko, Michael; Bonifacino, Gina
CC: Leinenbach, Peter
Sent: 4/22/2015 11:21:14 AM
Subject: FW: Notes about ODF's proposed approach for the upcoming Oregon BOF meeting on 4/22-4/23
Attachments: BOFATTCH_20150422_02_03.pdf

Hi Michael and Gina -

FYI – The attached document is a report from the Oregon Department of Forestry, and this material may be useful in our various work on riparian zones in the Puget Sound. I have provided a brief outline of the findings in this report in the email below.

I will be in contact with the authors of this ODF work and see when they plan to “publish” these findings (It will be a very easy thing to publish b/c it is some really good work.). Right now it is in “grey” literature – material submitted by ODF to today’s Oregon Board of Forestry meeting – ODF has been working on this for a couple of years and but they have not talked about it in public before today - maybe b/c it can be “controversial” to many of their constituents..

Although it was developed from Oregon data, the physics are similar between there and the Puget Sound.

Peter

From: Leinenbach, Peter
Sent: Friday, April 17, 2015 3:40 PM
To: Henning, Alan; Kubo, Teresa; Wu, Jennifer; Woodruff, Leigh; Labiosa, Rochelle
Cc: Opalski, Dan; Psyk, Christine; Barber, Anthony; Leinenbach, Peter
Subject: Notes about ODF's proposed approach for the upcoming Oregon BOF meeting on 4/22-4/23

Hey All –

I just want to forward a pre-meeting document from Oregon Department of Forestry (ODF) for the Oregon Board of Forestry (BOF) meeting which is taking place next week. (The website where I got the ODF pre-meeting document was - http://www.oregon.gov/odf/Pages/board/BOF_042215_Meeting.aspx).

Below, I just wanted to highlight **three** important topics in the attached ODF pre-meeting document directly we need to be aware up before next week’s meeting. It is important to point out that we have been talking with ODF about the first two topics listed below since 1999, and it is nice to see that ODF is finally saying the same thing which we have been telling them over the past 16 years. However, the third topic is a new one – It is about the spatial extent of where new riparian rules should apply – We specifically really need to think about this topic before next week’s meeting.

The three topic are briefly outlined below.

1. **Is there a problem with Oregon FPA?** - This ODF attached pre-meeting document shows that current **private forest practices in Oregon increase water temperature by a mean increase of 1.5°C** from one harvest unit (see **Figure 6** below – from page 6 in the attached ODF document). Since 1999, EPA and NOAA have been telling ODF that we believe that current Oregon FPA rules result in excessive shade losses and increase temperatures – and therefore Oregon FPA rules have not been shown to protect water quality. Essentially, the figure below illustrates the culmination of all of our efforts over the past 16 years to reach this same conclusion.

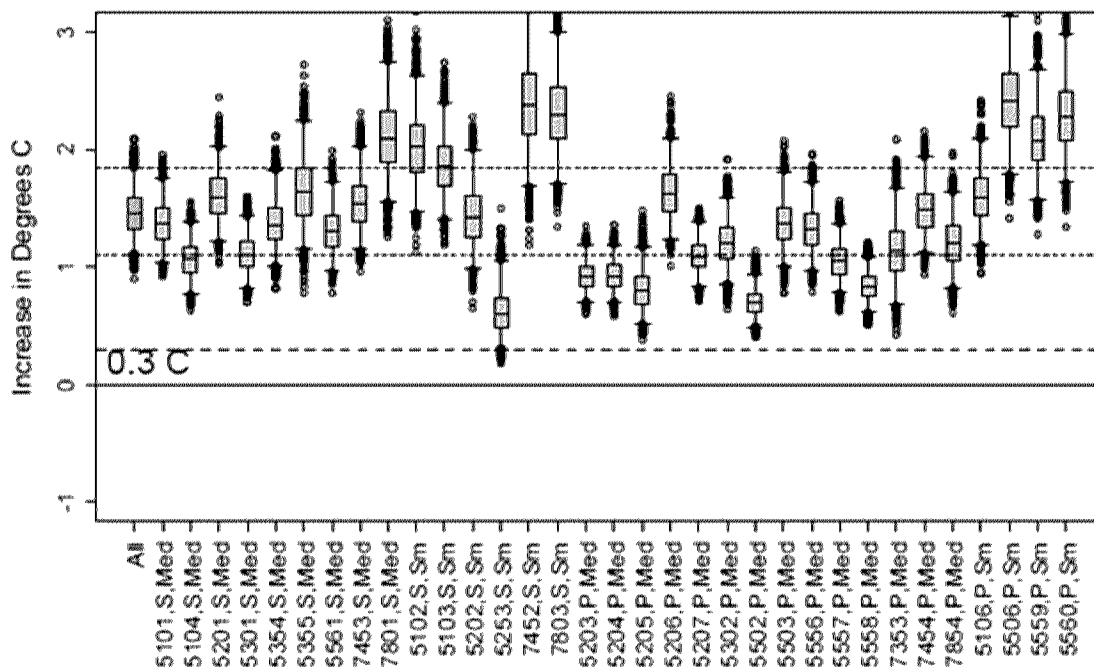


Figure 6. Temperature responses to simulated private forest FPA harvest. The "All" category on the far left, with an orange boxplot, represents the estimated mean of all sites.

2. **So there is a problem - what to do?** – This ODF attached pre-meeting document also presented a statistical model which showed that **one would need a “no-cut” buffer width of 90 feet in order to not increase stream temperatures in the stream by 0.3°C** (see Figure 7 below – from page 7 in the attached ODF document). This modeling result is what we have been telling ODF over the past several years – that is, through an evaluation of harvest/shade/temperature response studies presented in literature over the past few decades (and verified by mechanistic shade modeling work – using shade model in Oregon DEQ’s HeatSource model), we have told them that one needs a “no-cut” buffer width of between 75 and 110 feet to ensure that stream shade conditions are not reduced by riparian buffer removal (and a subsequent increase in stream temperature). It is good to see that their modeling results follows closely with our literature study results – it provides us with a level of confidence in their results presented in this image.

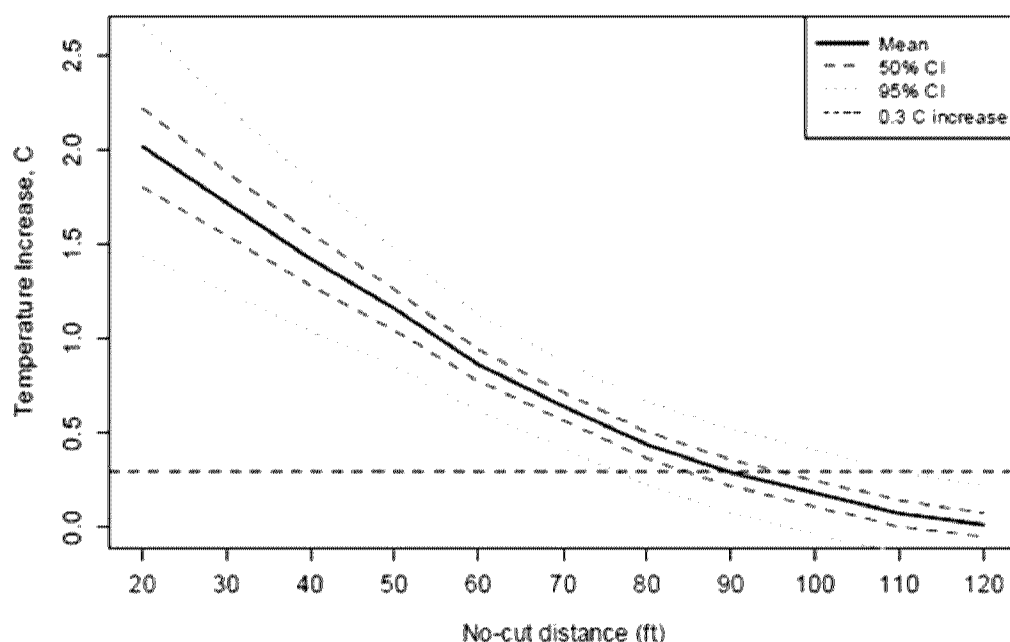


Figure 7. Mean temperature responses among all sites to simulated harvests at set slope distances from the stream. The black line indicates the mean response of the 33 sites, the dashed blue line represents a 50% Credibility Interval (CI) and the dashed orange line a 95% CI. The horizontal dashed black line indicates 0.3 °C.

3. **They got a solution, where do they propose to apply it?** - In the ODF attached pre-meeting document, they propose to apply these new riparian prescription between two bounds: 1) lower bound would be that it is applied to only small and medium Salmon, Steelhead, and Bull trout (SSBT) streams; and 2) the upper bound would be that it is applied to small and medium fish bearing streams (i.e., Type F) (see Page 13 of the attached document) (Note - Type-F streams differ from SSTB, in that Type-F are comprised of both SSBT, and other fish species (i.e., cutthroat trout, and other game fish)).

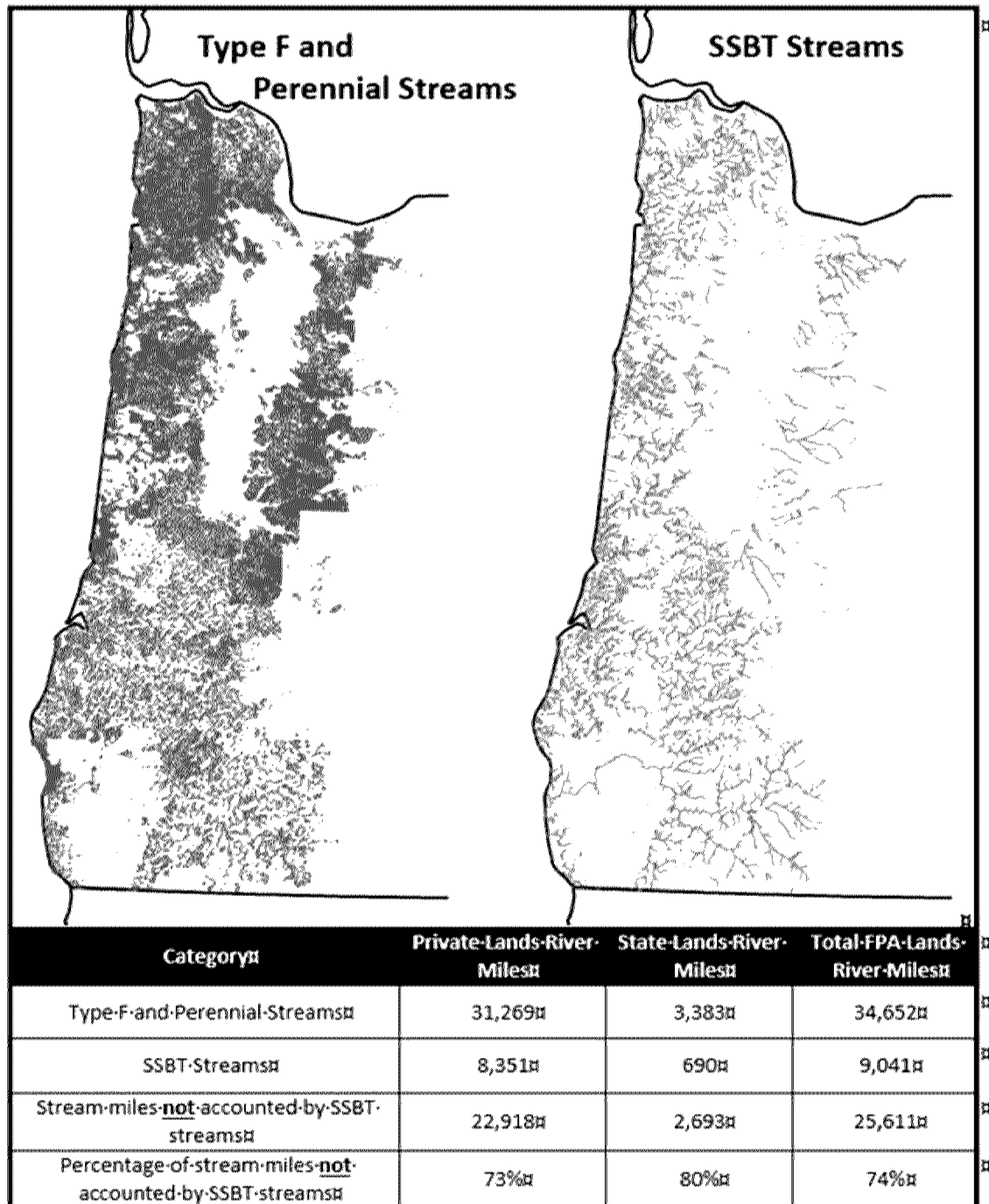
For streams in Western Oregon, limiting the application of the new rules to only SSBT streams (i.e., the lower bound) would not provide adequate protection for 74%, or over 25,000 miles, of Type-F and perennial non-fish bearing streams (see **Figure 1** below). So, only protecting SSBT streams would result in too much temperature increases (recall that current FPA rules on private small and medium streams increase stream temperature by an average of 1.5°C).

As for the proposed upper bound – it is important to point out that non-fish bearing streams (i.e., Type-N) are not included in this proposed upper bound. This fact is very problematic for two reasons: 1) there are many designated PERENNIAL Type-N streams in western Oregon, and 2) both perennial and non-perennial Type-N streams are often head water streams that provide critical cold water and large wood for meeting water quality standards, supporting beneficial uses and enhancing downstream fish habitat. Where Type-N streams are not protected by adequate buffers and are impacted by increased temperature loading, the pollutant load in these streams can be delivered to the downstream Type-F streams, which can result in water temperatures rising above the temperature criteria.

Accordingly, it would seem prudent to have the new rules apply to Type-F streams, along with Perennial Type N streams. In addition, it seems necessary to apply this new protection to non-perennial Type N streams determined to result in temperature increases in downstream Type F reaches (Note - The current rule for Small Type-N streams is no (or zero) riparian buffer retention – which will clearly result in a very large temperature increases).

Figure-1.-Comparison-between-Type-F-and-Perennial-streams-and-SSBT-(Salmon-Steelhead-and-Bull-trout)-streams-on-forested-lands-managed-under-the-Oregon-Forest-Practices-Act-(FPA).¶

[Type-F-and-Perennial-(i.e., Statewide_Streams_FP)-and-SSBT-(i.e., SSBtwSize)-datasets-were-obtained-from-ODF.]¶



Finally note, we have been seeing versions of this analysis and material over the months from ODF, but until now we have yet to see an “official” version of this material. At last , this document is kind-of “official”, being that it is official BOF pre-meeting material.

Thanks for your time. Please contact me if you have any questions.

Peter Leinenbach
 Aquatic and Landscape Ecologist
 U.S. Environmental Protection Agency - Region 10
 Office of Environmental Assessment

